

WHAT IS CLAIMED IS:

1. A method for producing a metal micropowder having a uniform particle diameter which comprises the sequential steps of:

preparing an aqueous solution which contains two salts of metals having oxidation-reduction potentials which differ from each other;

bringing a reducing agent into contact with the aqueous solution in the presence of a protective colloid, whereby first precipitating micro-particles of a metal having a relatively low oxidation-reduction potential and then depositing a metal having a relatively high oxidation-reduction potential on the micro-particles, to produce double layered particles comprising the micro-particles of a metal of a relatively low oxidation-reduction potential coated with a metal of a relatively high oxidation-reduction potential; and

bringing the colloidal solution containing the double layered particles into contact with a third metal salt and a reducing agent.

2. A method for producing a metal micropowder having a uniform particle diameter which comprises bringing a colloidal solution containing double layered particles comprising micro-particles of a metal of a relatively low oxidation-reduction potential coated with a metal of a relatively high oxidation-reduction potential into contact with a third metal salt and a reducing agent.

3. The method of claim 1 or 2, in which the colloidal solution containing the double layered particles is first mixed with the reducing agent and then a solution of the third metal salt is added to the mixed solution.

4. The method of claim 1 or 2, in which the reducing agent and a solution of the third metal salt are simultaneously added to the colloidal solution containing the double layered particles under mixing.

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5. The method of claim 1 or 2, in which the metal having a relatively low oxidation-reduction potential is silver, copper, or tin, and the metal having a relatively high oxidation-reduction potential is palladium.

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6. The method of claim 1 or 2, in which the third metal is palladium, palladium-silver alloy, platinum, silver, or nickel.

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7. A metal micro-particle comprising a core particle of silver, copper or tin which is coated with a palladium layer, which is further coated with palladium, palladium-silver alloy, platinum, silver, or nickel.

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8. A metal micropowder comprising a plurality of the metal micro-particles of claim 7.

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9. The metal micropowder of claim 8, which has a mean particle diameter in the range of 0.1 to 0.9 μm .

10. The metal micropowder of claim 8, which has a mean particle diameter in the range of 0.2 to 0.8 μm .

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11. The metal micropowder of claim 9, in which a normal particle diameter distribution σ_g is not more than 2.0.

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12. The metal micropowder of claim 9, in which a normal particle diameter distribution σ_g is not more than 1.9.

13. An electro-conductive paste comprising a metal micropowder of any one of claims 8 to 12.

14. A method for producing a metal micropowder
5 which comprises the sequential steps of:

preparing an aqueous solution which contains two salts of metals having oxidation-reduction potentials which differ from each other; and

10 bringing a reducing agent into contact with the aqueous solution in the presence of a protective colloid, whereby first precipitating micro-particles of a metal having a relatively low oxidation-reduction potential and then depositing a metal having a relatively high oxidation-reduction potential on the micro-particles, to produce double layered particles comprising the micro-particles of a metal of a relatively low oxidation-reduction potential coated with a metal of a relatively high oxidation-reduction potential.

15 20 15. The method of claim 14, in which the metal having a relatively low oxidation-reduction potential is silver, copper, or tin, and the metal having a relatively high oxidation-reduction potential is palladium.